

ABSTRACT

This invention relates to conjugates of the O-specific polysaccharide of *E. coli* O157 with a carrier, and compositions thereof, and to methods of using of these conjugates and/or compositions thereof for eliciting an immunogenic response in mammals, including responses which provide protection against, or reduce the severity of, bacterial infections. More particularly it relates to the use of polysaccharides containing the tetrasaccharide repeat unit: $(\rightarrow 3)\text{-}\alpha\text{-D-GalpNAc-(1}\rightarrow 2)\text{-}\alpha\text{-D-PerpNAc-(1}\rightarrow 3)\text{-}\alpha\text{-L-Fucp-(1}\rightarrow 4)\text{-}\beta\text{-D-Glcp-(1}\rightarrow$), and conjugates thereof, to induce serum antibodies having bactericidal (killing) activity against hemolytic-uremic syndrome (HUS) causing *E. coli*, in particular *E. coli* O157. The conjugates, and compositions thereof, are useful as vaccines to induce serum antibodies which have bactericidal or bacteriostatic activity against *E. coli*, in particular *E. coli* O157, and are useful to prevent and/or treat illnesses caused by *E. coli* O157.

The invention further relates to the antibodies which immunoreact with the O-specific polysaccharide of *E. coli* O157 and/or the carrier, that are induced by these conjugates and/or compositions thereof. The invention also relates to methods and kits using one or more of the polysaccharides, conjugates or antibodies described above.